

**Memorandum of Understanding
between
The Legacy Archive for Microwave Background Data Analysis
and
The National Space Science Data Center**

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1. Introduction

This is a Memorandum of Understanding (MOU) between the National Space Science Data Center (NSSDC) and the Legacy Archive for Microwave Background Data Analysis (LAMBDA) at the NASA Goddard Space Flight Center (GSFC). It documents the roles of those organizations in the acquisition, management, dissemination and preservation of data from NASA and NASA-collaborative astrophysical space missions (and selected ground-based programs). This MOU supersedes any prior agreements between the NSSDC and LAMBDA regarding the archiving and dissemination of relevant data.

Active archives interface with NASA and NASA-collaborative missions in acquiring data for general access, and they provide such access to data and supporting material to the general research community. The permanent archive receives data from the active archives, or sometimes from projects as arranged by the active archives, preserves the data, and provides them back to active archives when requested.

The NSSDC was created in 1966 as NASA's only archive for space and Earth science data. The NSSDC's data management role has evolved with the emergence of a series of active archives in both space and Earth science. Presently it has permanent archiving responsibility for NASA space science mission data. It has active archiving responsibilities in certain space science discipline areas. It has additional roles not germane to this MOU. The NSSDC home page is at <http://nssdc.gsfc.nasa.gov/>.

LAMBDA was created in 2002 as NASA's "thematic active archive" for cosmic microwave background (CMB) data. The LAMBDA home page is at <http://lambda.gsfc.nasa.gov>

This MOU will be reviewed by the NSSDC and LAMBDA annually, and by their advisory groups as desired by them. Inconsistencies between current practices and MOU statements, or future modifications to this MOU, will be addressed and agreed to by the Directors of the NSSDC and LAMBDA, with involvement of relevant NASA program managers when needed.

2. LAMBDA and NSSDC as active archives

LAMBDA is a NASA Astrophysics Science Archive Research Center. As such it is the primary active archive for CMB data. With the concurrence of NASA Headquarters, it may delegate some active archiving responsibility to the NSSDC.

LAMBDA will interface with NASA Headquarters and with NASA-funded CMB space-flight missions (and with other relevant programs designated by NASA) in the creation of

Project Data Management Plans (PDMP). These documents specify what data and supporting material will be delivered to LAMBDA on what schedule. The signature of the active archive on a PDMP certifies that it will be ready to manage the data cost effectively and user effectively on the specified schedule. For any missions involving an NSSDC active archiving role, there will be a LAMBDA-NSSDC addendum to this MOU specifying the respective roles of LAMBDA and the NSSDC for serving that mission.

LAMBDA will interface with operating missions to ensure the flow of data and supporting material from the missions to the active archive and, for relevant missions, directly to the NSSDC-as-permanent-archive as per the conditions set in the PDMP.

LAMBDA will ensure that the data and supporting material are effectively accessible by potential users from NASA and other research communities, and by the public. It is expected that most if not all user access will be electronic, but the active archive will also satisfy occasional requests for data to be sent offline. The active archive will assist users of the data and of supporting material (e.g., software tools) in their usage as needed.

LAMBDA will provide backup copies of the data to the NSSDC for permanent archiving in formats acceptable to LAMBDA and the NSSDC (and/or it will ensure a parallel flow of data and supporting material directly from projects to the NSSDC). As LAMBDA releases new products to the public, these products will be transmitted to the NSSDC in a mutually agreed upon manner. For data releases on CD, DVD, or similar media, LAMBDA shall provide the NSSDC with a set of these volumes. For data to be sent electronically, the details of such transfer shall be devised and agreed upon by LAMBDA and the NSSDC. Data transferred electronically will be subject to quality assurance by the NSSDC and remote storage of backup copies will be provided by the NSSDC.

LAMBDA will provide the NSSDC with annual estimates of the data volumes it (or the projects it serves) expects to deliver to the NSSDC for each of the coming three years, by mission.

It is assumed that the NSSDC and LAMBDA both have indefinite lifetimes. In the event that LAMBDA outlives the NSSDC, LAMBDA will arrange for alternative permanent archiving services in a timely fashion. In the event that the NSSDC outlives LAMBDA, LAMBDA will provide the NSSDC with sufficient material to ensure that LAMBDA-held data can continue to be served to the public. This latter provision protects LAMBDA-held data in the event of a catastrophe at LAMBDA.

3. NSSDC as Permanent Archive

The NSSDC will receive NASA-sanctioned CMB data and supporting material from LAMBDA, from the NSSDC-as-active-archive and/or from individual missions and it will ensure their long-term preservation against both media deterioration and technology obsolescence. The NSSDC permanent archive is not electronically accessible outside the NSSDC. The NSSDC assumes that the data and supporting material provided by LAMBDA is correct. It is the responsibility of LAMBDA to ensure this correctness when the data are delivered to the NSSDC.

Upon request from LAMBDA, the NSSDC will provide copies of data and/or supporting material in the same format it was at provided by LAMBDA (or its projects) at the time of the initial delivery.

Upon request from LAMBDA, the NSSDC will replicate and mail data volumes to requesters. It will charge end users a fee just sufficient to cover the incremental cost of satisfying the request. The NSSDC will report usage statistics to LAMBDA every six months.

The NSSDC will point users to LAMBDA from its high level, astrophysics-relevant web pages as the source of CMB data for researchers and the general public.